FIG 1

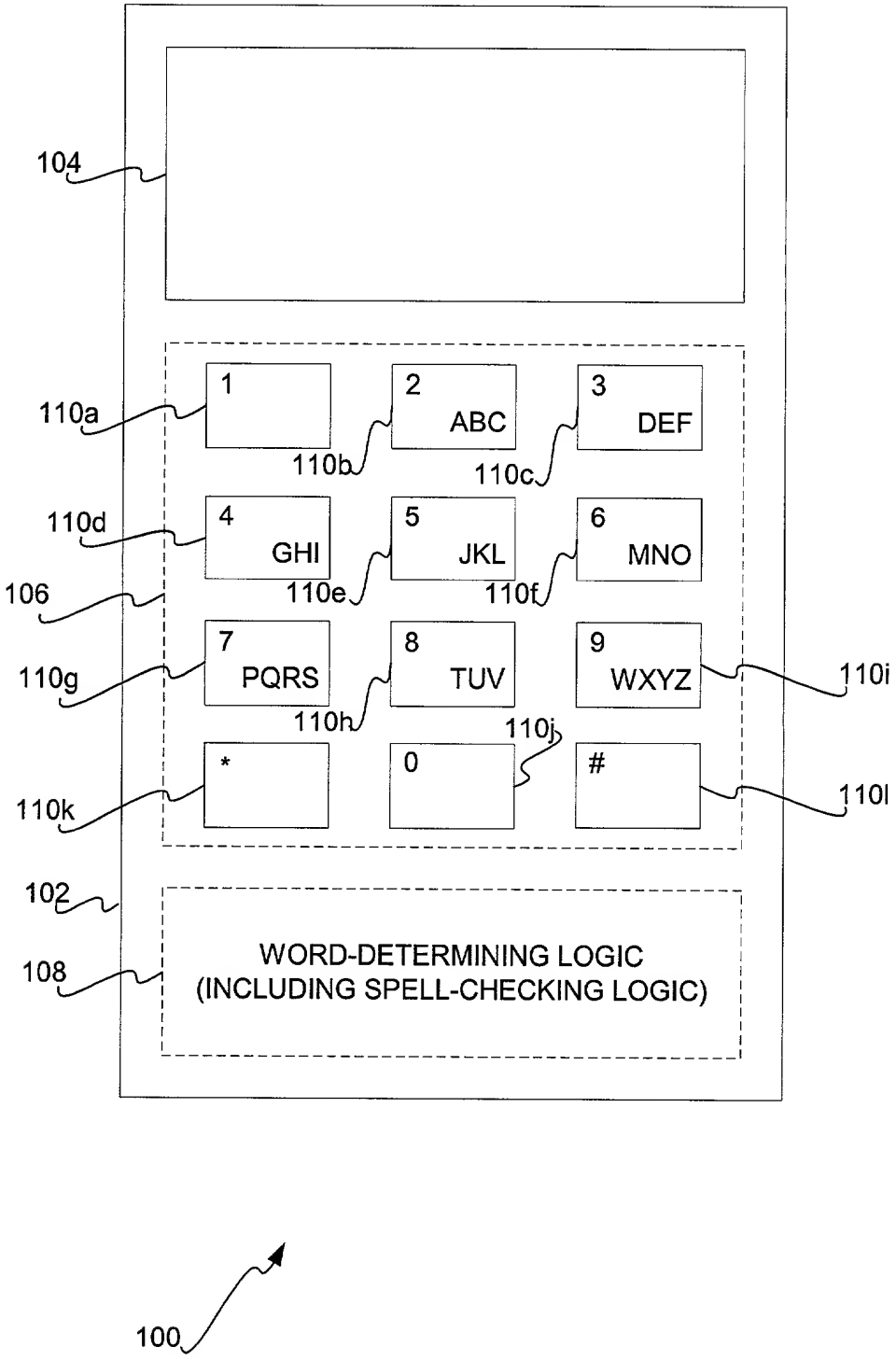

104
110a
1
2
ABC
3
DEF
110b
110c
110d
4
GHI
5
JKL
6
MNO
110e
110f
106
110g
7
PQRS
8
TUV
9
WXYZ
110i
110h
110j
110k
*
0
#
110l
102
108
WORD-DETERMINING LOGIC
(INCLUDING SPELL-CHECKING LOGIC)
100

FIG 2

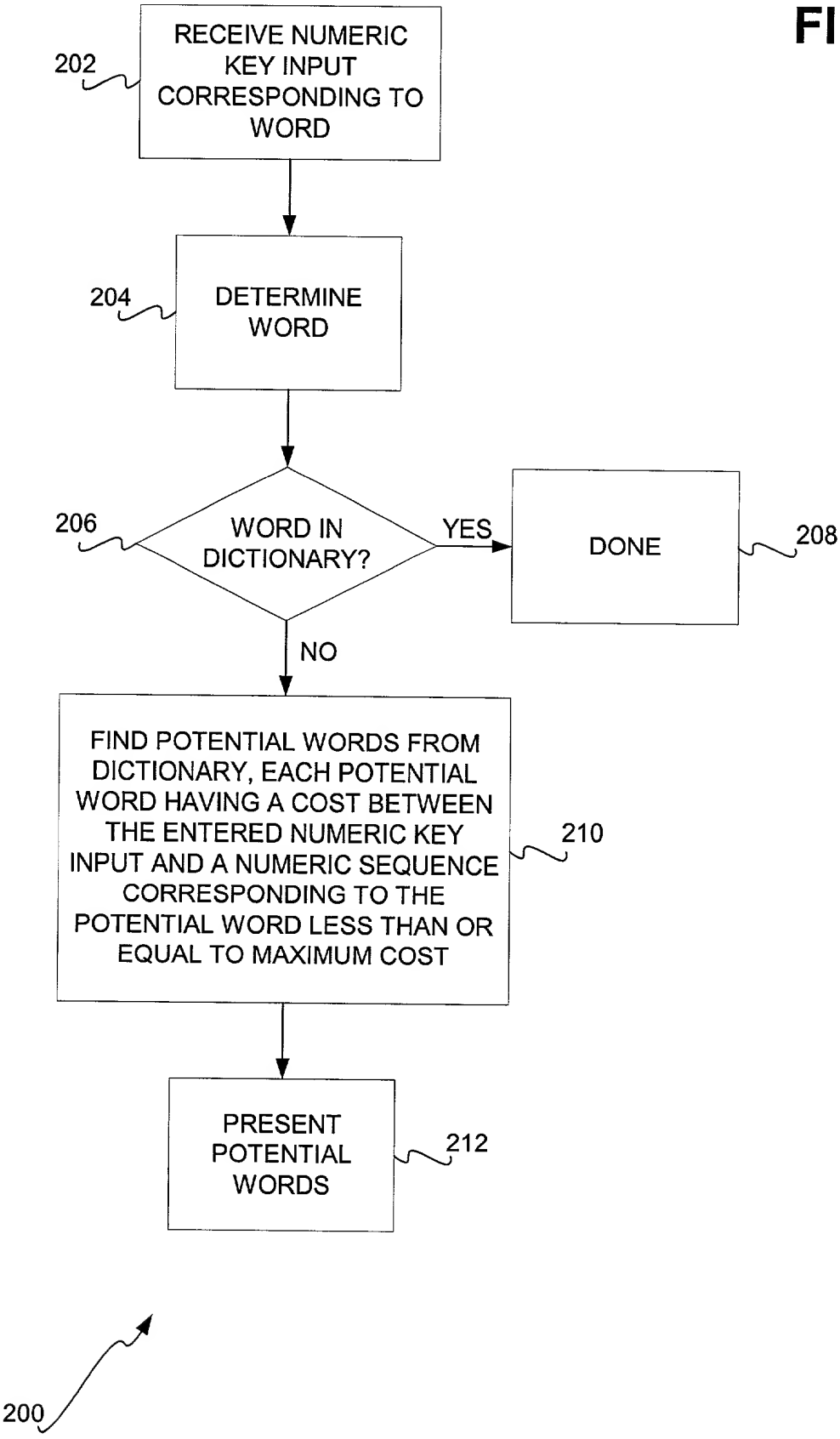

RECEIVE NUMERIC KEY INPUT CORRESPONDING TO WORD
202
DETERMINE WORD
204
WORD IN DICTIONARY?
206
YES
DONE
208
NO
FIND POTENTIAL WORDS FROM DICTIONARY, EACH POTENTIAL WORD HAVING A COST BETWEEN THE ENTERED NUMERIC KEY INPUT AND A NUMERIC SEQUENCE CORRESPONDING TO THE POTENTIAL WORD LESS THAN OR EQUAL TO MAXIMUM COST
210
PRESENT POTENTIAL WORDS
212
200

FIG 3

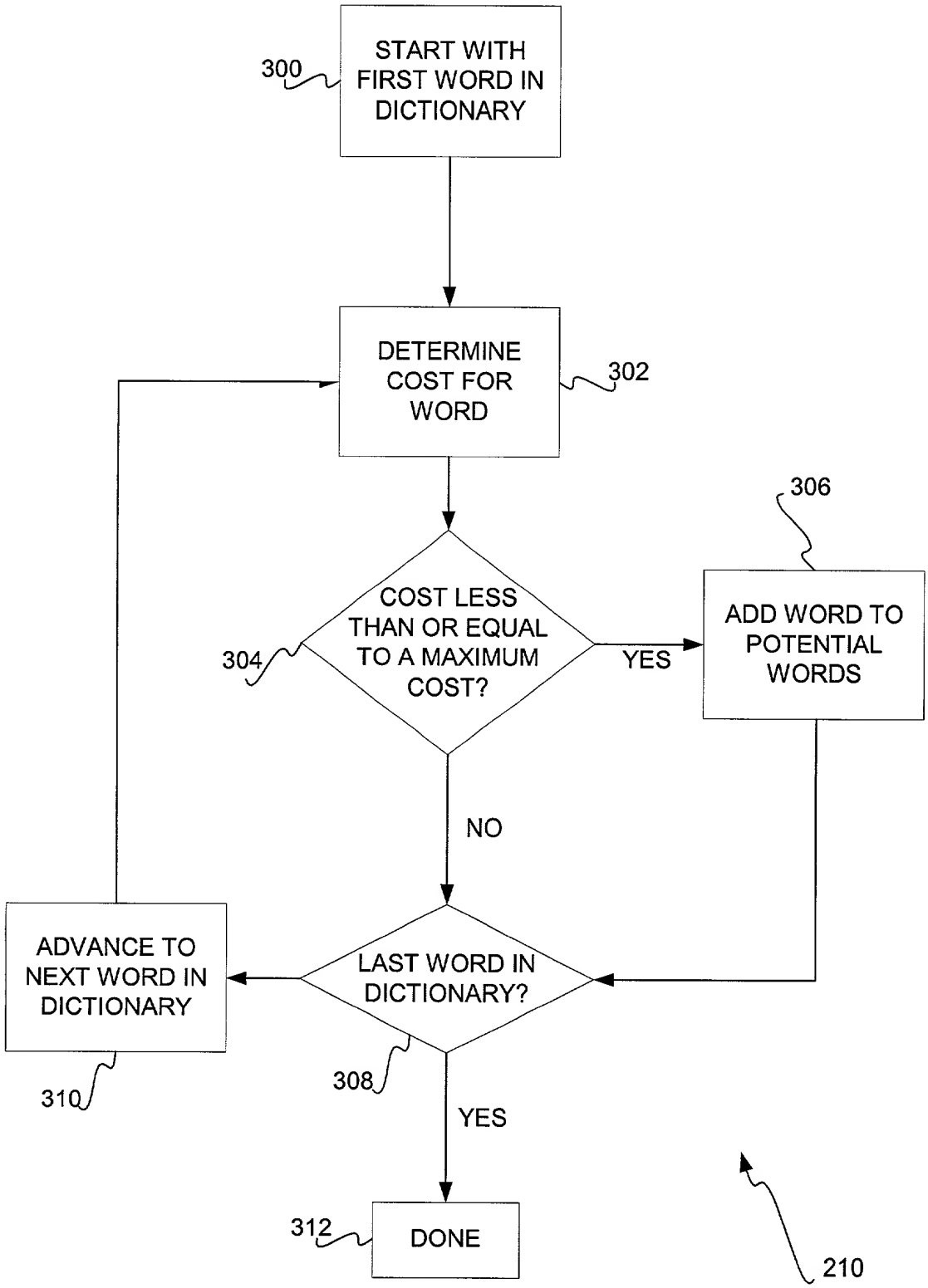

START WITH FIRST WORD IN DICTIONARY
300
DETERMINE COST FOR WORD
302
COST LESS THAN OR EQUAL TO A MAXIMUM COST?
304
YES
ADD WORD TO POTENTIAL WORDS
306
NO
LAST WORD IN DICTIONARY?
308
YES
ADVANCE TO NEXT WORD IN DICTIONARY
310
DONE
312
210

FIG 4

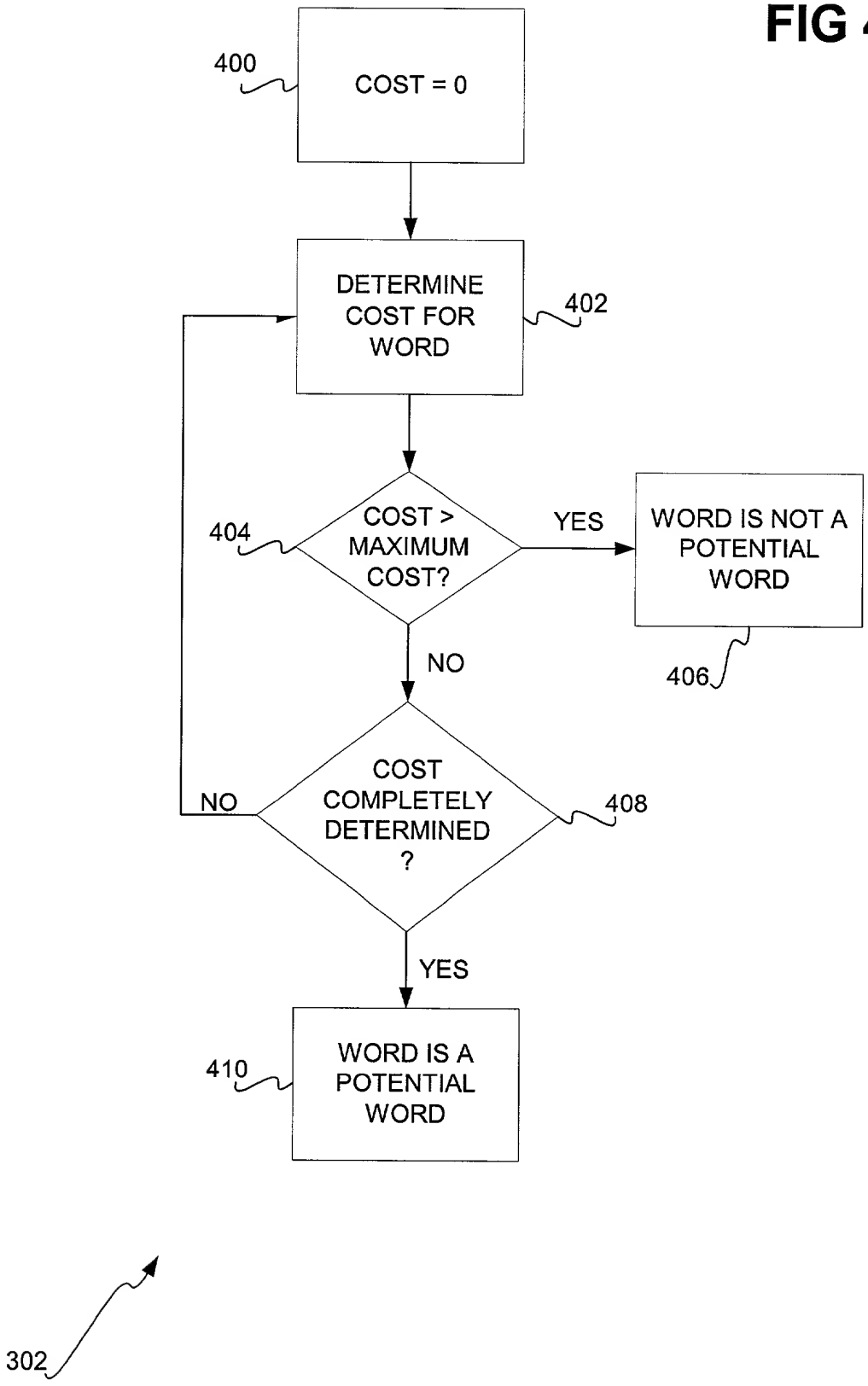
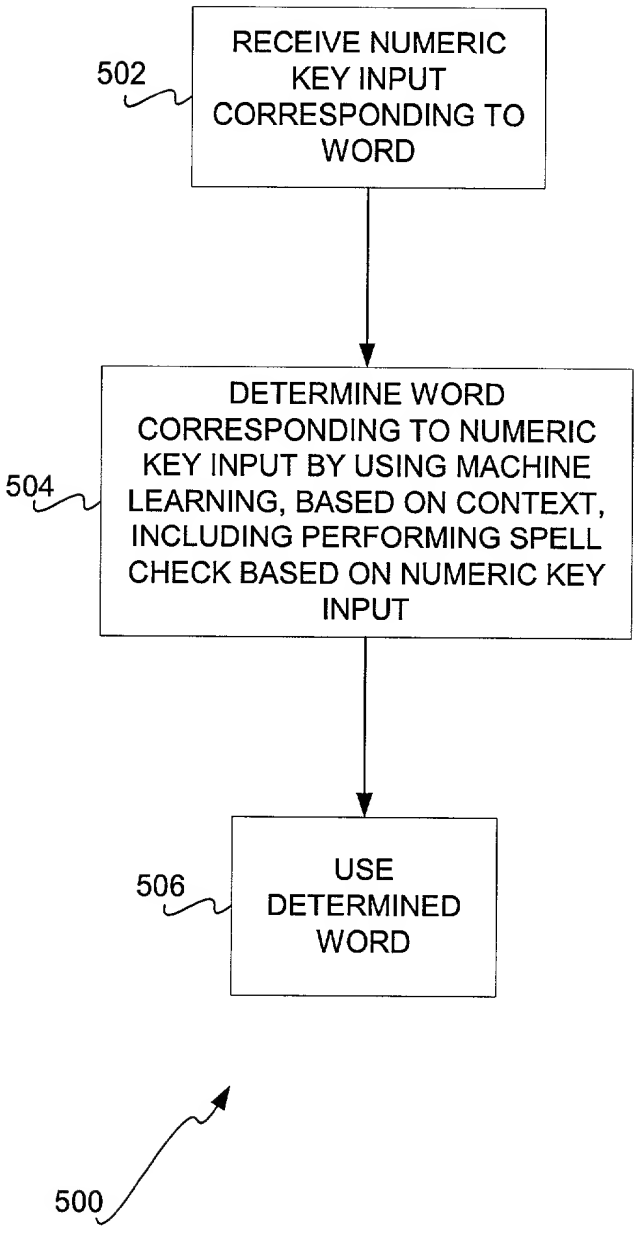

400
COST = 0
DETERMINE COST FOR WORD
402
404
COST > MAXIMUM COST?
YES
WORD IS NOT A POTENTIAL WORD
406
NO
NO
COST COMPLETELY DETERMINED ?
408
YES
410
WORD IS A POTENTIAL WORD
302

FIG 5


502
RECEIVE NUMERIC KEY INPUT CORRESPONDING TO WORD
504
DETERMINE WORD CORRESPONDING TO NUMERIC KEY INPUT BY USING MACHINE LEARNING, BASED ON CONTEXT, INCLUDING PERFORMING SPELL CHECK BASED ON NUMERIC KEY INPUT
506
USE DETERMINED WORD
500

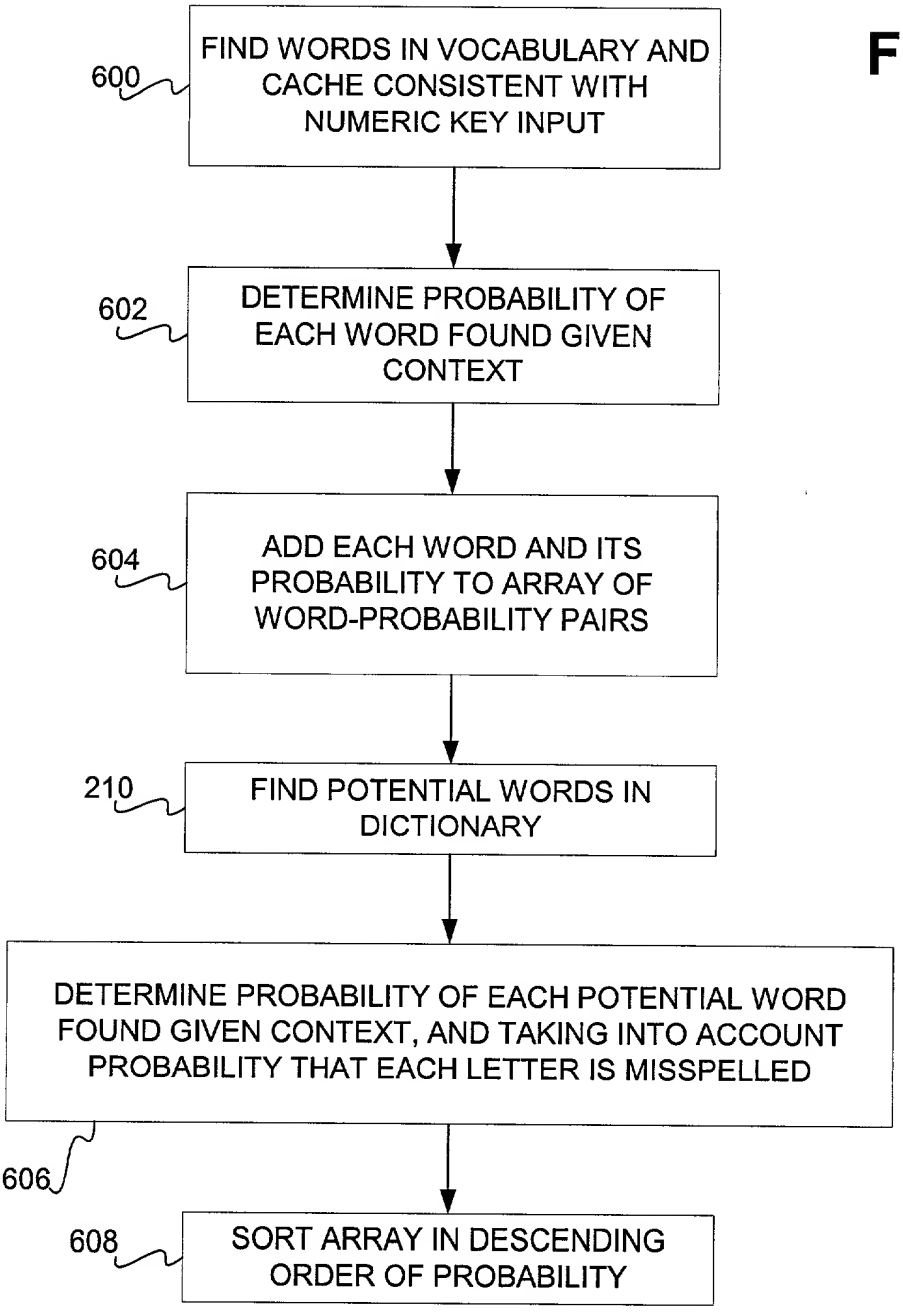
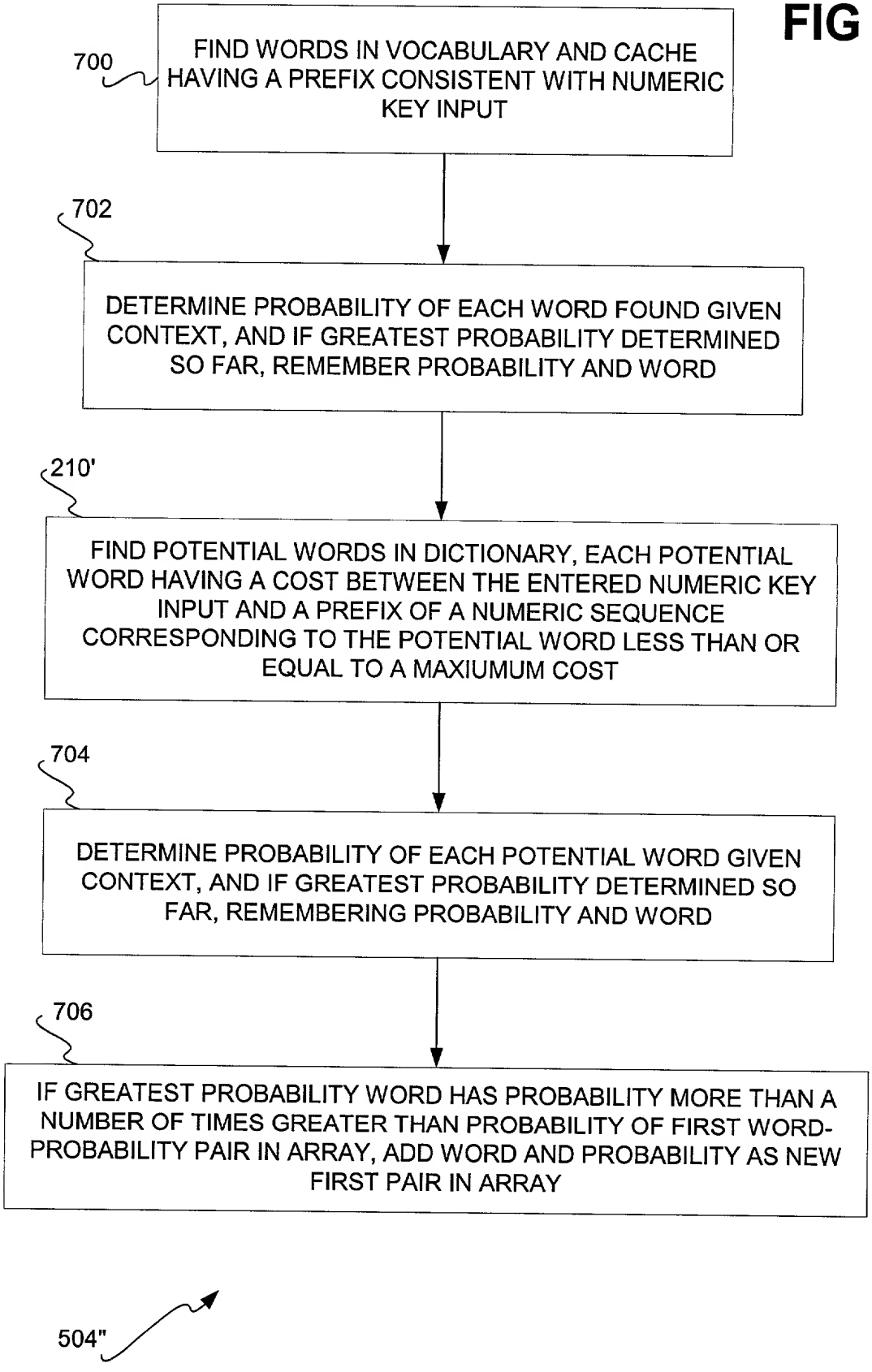

600
FIND WORDS IN VOCABULARY AND CACHE CONSISTENT WITH NUMERIC KEY INPUT
602
DETERMINE PROBABILITY OF EACH WORD FOUND GIVEN CONTEXT
604
ADD EACH WORD AND ITS PROBABILITY TO ARRAY OF WORD-PROBABILITY PAIRS
210
FIND POTENTIAL WORDS IN DICTIONARY
DETERMINE PROBABILITY OF EACH POTENTIAL WORD FOUND GIVEN CONTEXT, AND TAKING INTO ACCOUNT PROBABILITY THAT EACH LETTER IS MISSPELLED
606
608
SORT ARRAY IN DESCENDING ORDER OF PROBABILITY
504'

FIG 6

FIG 7


700
FIND WORDS IN VOCABULARY AND CACHE HAVING A PREFIX CONSISTENT WITH NUMERIC KEY INPUT
702
DETERMINE PROBABILITY OF EACH WORD FOUND GIVEN CONTEXT, AND IF GREATEST PROBABILITY DETERMINED SO FAR, REMEMBER PROBABILITY AND WORD
210'
FIND POTENTIAL WORDS IN DICTIONARY, EACH POTENTIAL WORD HAVING A COST BETWEEN THE ENTERED NUMERIC KEY INPUT AND A PREFIX OF A NUMERIC SEQUENCE CORRESPONDING TO THE POTENTIAL WORD LESS THAN OR EQUAL TO A MAXIUMUM COST
704
DETERMINE PROBABILITY OF EACH POTENTIAL WORD GIVEN CONTEXT, AND IF GREATEST PROBABILITY DETERMINED SO FAR, REMEMBERING PROBABILITY AND WORD
706
IF GREATEST PROBABILITY WORD HAS PROBABILITY MORE THAN A NUMBER OF TIMES GREATER THAN PROBABILITY OF FIRST WORD-PROBABILITY PAIR IN ARRAY, ADD WORD AND PROBABILITY AS NEW FIRST PAIR IN ARRAY
504"

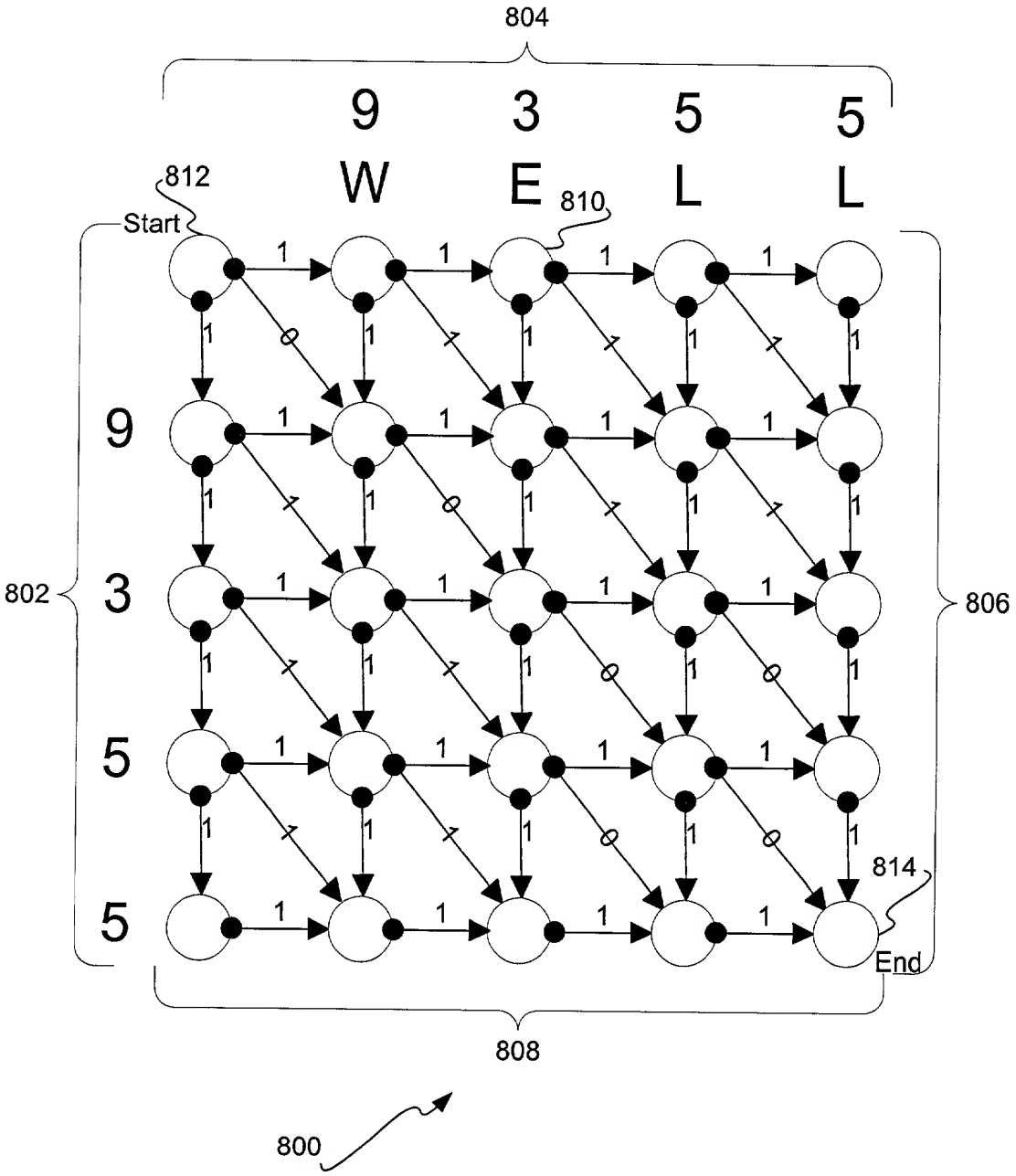



FIG 8